DOCUMENT RESUME

ED 405 373 TM 026 222

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TITLE A Time To Learn, a Time To Play: Premack's Principle Applied in the Classroom.
PUB DATE Oct 96
NOTE 12p.; Paper presented at the Annual Meeting of the Northeastern Educational Research Association (October 2-5, 1996). Submitted for publication as an article in "American Secondary Education."
AVAILABLE FROM American Secondary Education, Ashland University, 401 College Avenue, Ashland, OH 44805.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Control Groups; *Elementary School Students; Grade 6; Grade 7; Grade 8; *Incentives; Intermediate Grades; Junior High Schools; *Junior High School Students; Middle Schools; Play; *Recess Breaks; Reinforcement; *Student Motivation; Substitute Teachers
IDENTIFIERS *Middle School Students; *Premack Principle

ABSTRACT

Free time is the natural medium through which youngsters express themselves and develop motor, cognitive, and social skills. Nevertheless, free play on the playground is rarely used in the school as a means of enhancing students' motivation to learn. This study uses play as an application of Premack's principle (D. Premack, 1965) to the classroom. The principle states that a preferred behavior may be an effective reinforcer of a less preferred activity. It shows that taking middle school and junior high school students to play on the playground can be a powerful and inexpensive reinforcer of learning that could be used by teachers, and especially by substitutes. Subjects were 42 seventh- and eighth-grade students being taught by a substitute teacher. Controls were 25 sixth graders taught by the same teacher. This reinforcer was found to increase students' learning time on task, and group and self-regulation, while reducing the time wasted on disciplining teenage students. (Contains 29 references.) (Author/SLD)

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A Time to Learn, A Time to Play: Premack's Principle Applied in the Classroom

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Premack's Principle Applied in the Classroom

Brenda Geiger, Ph. D.

Abstract

Free time is the natural medium through which youngsters express themselves and develop motor, cognitive, and social skills. Nevertheless, free play on the playground is rarely used in the school as a means of enhancing students' motivation to learn. This study uses play as an application of Premack's principle (1965) to the classroom. It shows that taking middle school and junior high school students to play on the playground can be a powerful and uncostly reinforcer of learning that could be used by teachers, and especially substitutes. This reinforcer has been found to increase students' learning, time on task, and group and self-regulation, while reducing time wasted on disciplining teenage students.

Introduction

Teachers and principals often recognize how hard it is to be a substitute teacher. Substitutes often lack of the gamut of rewards that are available to the permanent teacher such as writing a report card, offering long-term rewards, or establishing rapport with the students. The students' rule of the game is often: "How to drive the substitute crazy." This article shows a successful manipulation of school and classroom environment which used going out to play on the playground as an incentive for students' learning.

Theoretical Background and Literature Review

Play is known to be the natural medium through which youngsters explore their environment, solve problems (Garvey, 1990; Rubin, Fein, & Vandenberg, 1983), and develop their motor skills and cognitive abilities (Piaget, 1966). Through free play the youths learn social cooperation and rule setting (Youniss, 1980). They learn to take the perspective of others, sharing, and democratic decision making in group games (Eiferman, 1970; Kohlberg, 1976; Mussen & Eisenberg-Berg, 1977). Play also has the therapeutic effect of helping young adolescents release stress and built up tension (Elkind, 1981).

The playground gives young teenagers the opportunity to develop a wide array of socio-cognitive skills. This is the place where friendship ties, cooperation, and generosity develop (Berndt, 1981; Mcguire, & Wiesz, 1982). There, young adolescents can communicate their feelings and thoughts to others and get support for dealing with the stress they are experiencing (Kanner, Feldman, Weinberger, & Ford, 1987). They can also share the perspectives of others and get involved in common activities. Furthermore, friendship ties within the school enhance students' positive attitude toward the school and academic performance (Epstein, 1983; Savin-Williams & Berndt, 1990).

Despite the benefits mentioned, less and less time is given to recess, free play, and other unstructured activities. This is especially so in higher grades (Newman, Brody, & Beauchamp, 1996). In middle and junior high school recess is often judged unnecessary in a highly structured academic setting. Students have to master multiple topics and subject matter, therefore they cannot afford wasting their time on recess. This is particularly so if they are to aim for superior academic achievement (Bereiter & Engleman, 1966; Hills, 1987). However, by losing opportunities for communicating, socializing, and free play during recess, students simultaneously miss opportunities for healthy development (Elkind, 1981). As a result, problem behavior and classroom disturbance are likely to occur.

Most programs that aim at changing students' social and academic behavior manipulate consequences through rewards and punishments. These range from edibles (Barton, Brulle, & Repp, 1987), exchangeables such as tokens (Kadzin & Gessey, 1980) and stickers (Vasta & Stirpe, 1979), social rewards (Darch & Gersten, 1985), activities and privileges (Sulzer-Azaroff, & Mayer, 1977), to verbal reprimands (Wyatt & Hawkins, 1987).

Nevertheless, free play in outdoor recess is seldom included in the teachers' repertoire of rewards or as an incentive for learning. Of the several textbooks (Bielhler & Snowman, 1993; Gage & Berliner, 1992; McGown, Driscoll, & Geiger Roop, 1996; Woolfolk, 1995) examined that have been adopted for classroom instruction in colleges and universities in educational psychology, the word "play" is not even mentioned in the index pages. Similarly, rare are the studies that have examined the importance of free play time in the schools (Newman et al., 1996).

This study uses free play in recess as an application of the Premack's principle (1965) to the classroom. This principle states that a preferred behavior, that is, a behavior that has a high probability of occurring, may be used as an effective reinforcer of a less preferred activity, that is, an activity that has a low frequency of occurrence. This principle has been successfully applied in the classroom with problem-behavior and out-of-control children (Homme, 1966). Observing the frequency with which children engage in free play on the playground on their own initiative, and the joy with which they go to recess, one may infer that this activity is a high probability behavior. Free play on the playground may then be used to reinforce an activity that students are not likely to engage in so spontaneously such as listening to the substitute teacher and completing the work the substitute is assigning to them.

This study examines the power of recess as a reinforcer of learning. The specific hypothesis of this study was the following: Students allowed to go for recess on the playground at the end of a class period once they complete all their work would perform more efficiently and with less discipline problems than a reference group of students to whom no such an incentive would be offered.

Methodology

Subject Selection

The subjects were 67 middle and junior high school students attending the substitute's class sections in a private school in the Capital District of New York State. Twenty-five students were in 6th grade, 21 students in 7th grade, and 21 others in 8th grade. The students in 7th and 8th grades constituted the experimental group, and the 6th graders were the comparison group.

Procedure

The permanent teacher who had to take a 13-day leave of absence was blind to the experiment, and so were his students and the school principal. The researcher became the substitute teacher for all this time. The permanent teacher gave to the researcher a work package in which was specified the material to be taught and the work to be assigned daily to each class. The researcher taught the 6th, 7th, and 8th graders an average of two class periods each day. Each class period lasted 45 minutes. The clock in the classroom was visible to the students and to the substitute teacher. Every 45 minutes the bell rung to indicate the end of the period. This bell could be heard from the playground. All year long recess was not given to middle and junior high school students despite the fact that the school had a playground larger than the size of a major league baseball field. These students were allowed a 30-minute lunch period. Free play was rarely on the school schedule.

The power of recess as reinforcer became evident when at the beginning of the spring the middle school and junior high school students suggested on their own going out to the playground as a reinforcer: "If we finish all our work can we go out?" The researcher took this opportunity to establish a contingency contract with the 7th and 8th grade students. This contract specified which behaviors had to obtain before the reward ensues. The students would be able to go out on the playground 5 to 10 minutes before the end of the class period provided that:

1. All students complete all the work their permanent teacher had assigned for any given time period. This condition specified that the low performers or troublemakers had to complete their work and not just go to the playground once the high performers were done.
2. At the written suggestion of the permanent teacher, the students were allowed to work in groups of two. However, each student would have to hand in a completed assignment separately.
3. The work could not be sloppy, and a good effort had to be made to do the work correctly. The teacher would check randomly several assignments before the class would be allowed to go out. This condition was added to make sure that students would not hand in anything just to get rid of the assignment.
4. Once they completed their work, they would go down the stairs, the hallway, and exit the building quietly.

By contrast, going out to the playground was not mentioned to the 6th graders. They would, however, be able to engage in a quiet activity once they had completed all the work that had been assigned to them. As with the 7th and 8th graders, the 6 graders were allowed to work with a partner. A record was kept of the time the researcher finished teaching the assigned material and students completed their work, that is, of the time left before the bell rang. The level of social cooperation and self-regulation were also noted and so were the disturbances and problem behaviors that arose during each class period.

Results

Learning

As predicted, recess on the playground acted as a powerful reinforcer which motivated the students to focus on the material to be learnt and induced self-discipline. Invariably, for 52 class periods all 7th and 8th graders completed the work that had been assigned by their permanent teacher 5 to 10 minutes (Mean = 7 minutes) before the end of the class period. By contrast, the

6th graders finished their work 5 to 10 minutes before the bell rang only during 6 percent of the class periods. They completed their assignment on time with no extra time left during 60 percent of the class periods and did not finish their work for the remainder. Furthermore, three students in this reference group were observed to have done nothing. During all the time periods the researcher had been a substitute these students had opened neither their textbook nor their notebook.

Discipline

The researcher reminded the 7th and 8th graders at the beginning of each class not to waste time if they wanted to go on the playground. Aside from minor disturbances such as going to the bathroom, getting a tissue, or talking, little disciplining was needed. The group's self-regulation was done by the students themselves who wanted to enjoy themselves on the playground. The few who tried to disrupt the class were reprimanded by their classmates. "Shut up", "Let's get it over with", "She is nice with us", or "Come on, we do not have too much time left", were representative comments. The 6th graders were also reminded at the beginning of each class period not to waste time so they could have free time at the end of the class period. However, this comment did not help. Several students interrupted the class by flying paper airplanes at each other's direction and by constantly asking to go to the bathroom, get a drink, and/or to get a tissue to blow their nose. Some students were sent to time out, and the principal had to be called a number of times. However, the appearance of the principal did not deter further classroom disruption. These students would stop acting out for a few minutes when the principal showed up, only to go wild again once principal had left. During 5 out of 16 periods the principal had to be called as often as 3 times within a class period. By contrast, the principal's appearance was never needed in 7th and 8th grades.

On the Playground

Letting young adolescents full of energy and active hormonal changes on the playground to play chase, swing on the swing set, play soccer, or just hang around and talk with one another

was not to let them loose. It allowed them to take a breath of oxygen, release built up stress, exchange feelings and ideas and to calm down. When the bell rung they were ready to go back to the classroom as was agreed. However, not fully satiated, several students wanted to make sure as they entered the school building that the same reinforcer would be once more used. So, they asked: "Can we go out again if we finish next time."

Two anecdotal events will be added here since they show the lack of understanding of basic educational principles in this school. After the principal found out that the 7th and 8th graders were going out, she sent a note to the researcher stating: "Do not take the students out. If the students have finished have them go on with their work." Also, when the researcher asked some of the teachers for their reasons for not taking the students to the playground, some of them reported their fear of letting their students loose: "If I let my students go to the playground they may hide behind the bushes and never come back," while others mentioned their apprehension concerning the principal's expected reaction, "If I let them go out, Mary [fictitious name] would not like it."

Discussion

This pilot study shows that free play in outdoor recess is a powerful incentive for classroom learning in middle and junior high schools and for minimizing classroom disruption and behavior problems. However, since this venture involved only a small number of classes and students, a larger scale study would be needed to confirm these suggestive results. More accurate records, with predefined behavioral categories, could also be kept by a student helper.

Nevertheless, the implications of this study are numerous. Teachers should be aware that educationally enriched and structured activities which seem such a great reward to them may not be so great in the eyes of their students. Obtaining feedback from the students or letting them suggest their own reinforcers is of fundamental importance to increase time on task. This is even more so when substitutes have to do the teaching. A contract could be established which stipulates the conditions under which students would be able to obtain the rewarding activity they have chosen.

It is, therefore, suggested that middle schoolers and junior high school students should be given their medium of expression—play. Teachers and educators could take advantage of outdoor recess as an uncostly but extremely powerful incentive to stimulate students' learning. This reinforcer would also reduce problem behavior in the classroom by helping young adolescents release built up tension and energy and allowing them to talk and share their experiences with their classmates.

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